

AMENDMENTS TO THE CLAIMS:

The listing of claims will replace all prior versions, and listings of claims in the application:

LISTING OF CLAIMS:

1. (Currently amended) A method for producing a thermal paper with a carrier substrate, an intermediate pigment layer, a thermal reaction layer and, optionally, one or more additional intermediate layers and top layers, wherein the intermediate pigment layer is formed by means of the curtain coating method with an aqueous application suspension containing pigments, binding agents and, optionally, additional application additives and containing calcined kaolin, characterized in that an aqueous application suspension with calcined kaolin with a particle size of 0.1 to 10 µm and a solid matter contents of about 25 to 75% by weight is applied by means of the curtain-coating method at an operating speed of at least 500 m/min, wherein the application weight of the aqueous application suspension containing the calcined kaolin is adjusted to up to 30 g/m², based on dry substance, and simultaneously online, or offline in a separate coating method, ~~the thermal reaction layer is formed and dried on the one or more intermediate pigment layers by means of the curtain coating method,~~ the thermal reaction layer is formed and dried on the one or more intermediate pigment layers by means one of the curtain coating, a roller application method, a roller spread coating method, and an air brush method, wherein the curtain coating method includes a curtain head having a clear exit gap width adjusted to 0.1 to 1 mm, and the nozzle throughputs for the respective application suspension are adjusted to 0.3 to 15.1 cm³/(cm working width x s), the curtain spreader head being adjustable to a single or multiple gap.
2. (Previously Presented) A method according to Claim 1, characterized in that the solid matter contents of the application suspension lies between about 35 and 60 % by weight.
3. (Previously Presented) A method according to Claim 1, characterized in that the drop heights of the aqueous application suspension containing the calcined kaolin during the curtain-coating method is adjusted to about 5 to 34 cm.

4. (Previously Presented) A method according to Claim 1, characterized in that the application suspension containing the calcined kaolin is adjusted to a viscosity of about 150 to 1500 mPas (Brookfield, 100 U/min, 25°C).

5. (Previously Presented) A method according to Claim 1, characterized in that the surface tension of the application suspension containing the calcined kaolin is adjusted to about 23 to 60 mN/m (static ring method according to Du Noüy).

6. (Previously Presented) A method according to Claim 1, characterized in that a conventional carrier paper, a synthetic carrier paper and/or a plastic material film is used as the carrier substrate, with the paper carrier having a basis weight of about 40 to 120 g/m².

7. (Previously Presented) A method according to Claim 6, characterized in that the paper carrier contains for stabilization of dimensions synthetic fibers in addition to natural cellulose fibers, with the long fiber percentage amounting up to about 40% by weight, , and the short fiber percentage amounting to about 60 to 95% by weight.

8. (Previously Presented) A method according to Claim 1, characterized in that into the application suspension containing the calcined kaolin are incorporated customary additives in the form of processing auxiliaries, in particular in form of surface-active substances, retention auxiliaries and/or rheological auxiliaries.

9. (Previously Presented) A method according to Claim 8, characterized in that the surface-active substances are employed in the form of C₂-C₁₂-di-alkylsulfosuccinate-alkali salts or siloxanes, the retention auxiliaries in the form of carboxy-methyl celluloses or poly-acrylamides and/or the rheology auxiliaries in the form of higher molecular, water-soluble starch derivatives, carboxy-methyl celluloses, sodium alginates, polyvinylalcohols or poly(meth)acrylates.

10. (Previously Presented) A method according to Claim 1, characterized in that the calcined kaolin of the aqueous application suspension presents a particle size of about 0.1 to 10

μm.

11. (Previously Presented) A method according to Claim 1, characterized in that the aqueous application suspension containing calcined kaolin contains a binding agent selected from water-soluble starches, starch derivatives, hydroxyl-ethyl-celluloses, polyvinyl-alcohols, modified polyvinyl-alcohols, sodium-polyacrylates, acrylamide-(meth)acrylate-co-polymers, acrylamide-acrylate-methacrylate-terpolymers, alkali salts of styrene-maleic anhydride-co-polymers, alkali salts of ethylene-maleic anhydride-co-polymers and/or latices such as poly-acrylate, styrene-butadien-co-polymers, polyurethanes, acrylate-butadien-co-polymers, polyvinyl-acetate and acryl-nitril-butadien-co-polymers.

12. (Previously Presented) A method according to Claim 1, characterized in that the application weight of the aqueous application suspension containing the calcined kaolin is adjusted to up to about 30 g/m², relative to the dry substance.

13. (Previously Presented) A method according to Claim 12, characterized in that the application weight of the aqueous application suspension containing the calcined kaolin is adjusted to up to about 2 to 20 g/m², relative to the dry substance.

14. (Previously Presented) A method according to Claim 1, characterized in that on the one or more intermediate pigment layers, optionally after drying, there are formed one or more additional intermediate pigment coats by means of the curtain-coating method.

15. (Cancelled)

16. (Previously Presented) A method according to Claim 14, characterized in that into the aqueous application suspension utilized for forming the thermal reaction layer are incorporated color developers, color formers, sensitizing melt auxiliaries, anti-aging means, binding agents and customary additives, such as in particular slip additives, rheological auxiliaries, optical brighteners and/or fluorescent substances.

17. (Previously Presented) A method according to Claim 14, characterized in that the drop height of the aqueous application suspension for the formation of the thermal reaction coat is adjusted to about 5 to 35 cm during execution of the curtain-coating method.

18. (Previously Presented) A method according to Claim 14, characterized in that the application suspension for the formation of the thermal reaction layer is adjusted to a viscosity of about 150 to 1500 mPas (Brookfield, 110 U/min, 25° C).

19. (Previously Presented) A method according to Claim 14, characterized in that the surface tension of the application suspension for the formation of the thermal reaction layer is adjusted to about 23 to 60 mN/m (statical ring method according to Du Noüy).

20. (Previously Presented) A method according to Claim 14, characterized in that the dried thermal reaction layer is adjusted using customary smoothing means to a Bekk smoothness of about 100 to 1200 s, measured according to DIN 53101.

21. (Previously Presented) A method according to Claim 14, characterized in that the aqueous application suspension utilized for the formation of the thermal reaction coat contains, in addition, further pigments.

22. (Previously Presented) A method according to Claim 21, characterized in that the pigments represent inorganic extender pigments, in particular clays, magnesium carbonates, sodium aluminum silicates, aluminum oxides, aluminum silicate, silicic acid, siliceous earth, magnesium silicates, titanium dioxides, calcium carbonates of synthetic as well as natural origin.

23. (Previously Presented) A method according to Claim 22, characterized in that the extender pigments have an average particle size of about 0.1 to 10 µm.

24. (Previously Presented) A method according to Claim 14, characterized in that on the thermal reaction layer, additional layers are formed on-line or off-line as protective coat and/or as coat to enhance the capability of being printed on.

25. (Previously Presented) A method according to Claim 1, characterized in that the curtain-coating method is operated at a speed of more than 750 m/min.

26. (Previously Presented) A method according to Claim 25, characterized in that the curtain-coating method is operated at a speed of at least about 1000 m/min.

27. (Cancelled)

28. (Previously Presented) A method according to Claim 1, wherein said curtain coating method includes a curtain head having a clear exit gap width adjusted to about 0.2 to 0.6 mm.

29. (Previously Presented) A method according to Claim 1, wherein said nozzle throughputs for the respective application suspension are adjusted to about 0.5 to 5.0 cm³/(cm working width x s).

30. (Previously Presented) A method according to Claim 3, wherein the drop heights of the aqueous application suspension containing the calcined kaolin is adjusted to a viscosity of about 8 to 20 cm.

31. (Previously Presented) A method according to Claim 4, wherein the application suspension containing the calcined kaolin is adjusted to a viscosity of about 250 to 900 mPas.

32. (Previously Presented) A method according to Claim 5, wherein the surface tension of the application suspension containing the calcined kaolin is adjusted to about 27 to 40 mN/m.

33. (Previously Presented) A method according to Claim 7, wherein the long fiber percentage amounts up to about 5 to 40% by weight.

34. (Previously Presented) A method according to Claim 7, wherein the short fiber percentage amount up to about 60 to 80% by weight.

35. (Previously Presented) A method according to Claim 10, wherein the calcined kaolin of the aqueous application suspension presents a particle size of about 0.1 to 2 µm.

36. (Previously Presented) A method according to Claim 13, wherein the application weight of the aqueous application suspension containing the calcined kaolin is adjusted to up to about 4 to 8 g/m², relative to the dry substance.

37. (Previously Presented) A method according to Claim 14, wherein the surface tension of the application suspension for the formation of the thermal reaction layer is adjusted to about 30 to 40 mN/m.

389. (Previously Presented) A method according to Claim 20, wherein the dried thermal reaction layer is adjusted using customary smoothing means to a Black smoothness of about 300 to 700 s.

3940. (Previously Presented) A method according to Claim 26, wherein the curtain-coating method is operated at a speed of at least about 1500 m/min.